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Lab Test

GIG Antic

Hard Drives

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When we saw IBM Canada Ltd.'s photograph of its tiny new hard drive cas-

ted in an eggshell beside a tiny baby chicken, we wondered about the exact message the company wished to convey.

Maybe it's a warm and fuzzy thought, like "Good drives come in small packages?" Or something more obscure: "A drive in the shell is better than a bird in the hand?" Or, perhaps less charitably: "Don't put all your eggs in one basket?"

But actually, I'm looking towards what must surely be the most obvious message: "Check, this small drive!"

In any case, those IBM "microdrives" (don't call them 348) certainly are small. With a coin-sized disk platter, one of the 348MB drives weighs less than one AA battery and has about 200 times the storage capacity of a floppy disk. It fits into the Compact Flash disk that's already available in many hand-held computers and digital cameras.

On the other hand, Fujitsu Canada Inc. is now shipping the 30 30B Floated 32 drives that store as much as 3 GB per platter. (The technology particularly suits applications where drive height should be minimized, as in the case of notebooks.)

This issue, Canadian Computer Wholesaler's Lab Test focused its attention on hard drives ("Gigabyte Hard Drives" page 18.) With the smallest tested products weighing in at just less than 100B of capacity, these drives are unapologetically big. Purchasers will appreciate the room to maneuver, and they'll definitely like the fast-shrinking price tags on considerable storage.

Egging on Apple

Life is rather peachy these days over at Apple Computer Inc. The company just announced its fourth-quarter results, with revenues of US\$1.6 billion and profits of US\$106 million. For the year, revenues were US\$5.9 billion with earnings of US\$349 million, compared to fiscal 1993 revenues of US\$7.1 billion and a net loss of US\$31 million. It seems the sharing and doing well by



whom CEO Steve Jobs is paying to be, *wealth* (ironically, his anyone else noticed Jobs' "Internet" job is getting lengthy?)

Notably, the company sold 378,000 shares in the product's first six weeks — the fastest selling Microsoft ever. And Apple says more than 40 per cent of those buyers are new customers!

CRACKING INNOVATION



E-Commerce, Sunny-Side Up

Although few businesses are making major money on the Internet, electronic commerce is generally held to be an expanding, and even profitable, reality. That message was emphasized at the recent Electronic Commerce Solutions '98 conference. "The Internet is recognized as a platform for significant economic development in the future," said Peter Ferguson, deputy director general, electronic commerce policy for Industry Canada, during the conference's Calgary stop. His prediction: Internet commerce would account for US\$327 billion by the year 2000.

In October, Canada's federal government introduced the "Personal Information Protection and Electronic Documents Act," that will use the use of sophisticated electronic signatures when online deals and companies do business with the government. Moreover, under an accompanying cryptography policy, Canadians are free to develop, import and use whatever cryptography products they like. The idea is that such freedom will encourage e-commerce by facilitating the secure transmission of credit card numbers and other sensitive information.

At the conference, Ferguson warned that the Internet redefines the concept of competition: "You don't know who the gorilla is. It might be down the street." And Douglas McQuay, a partner with Rouse & Young pointed out: "The Internet is really a channel just like a retail store. You can sell on it, fulfill on it and deliver customer service on it."

How do you like those eggs and apples? Drop me a line at greg@news.com.ca. CR

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Overclocking Is an Overrated Activity

I read with amusement (the reader's comments in your article about overclocking his Celsius to 450MHz, *CCW* October "Tech Talk," page 46).

It was his CPU for a whopping eight days without any difficulty and he references Tom's Hardware on the Internet as a website that thousands of other people are doing the same.

As operator of a large computer server centre, I see such customers every day. Usually they have tried to scrape the millipede off the pins they decided to expedite the speed (only on the CPU) and then kept into centre. Problems that not routinely are are things like intermittent passing of the system, random CPU or motherboard faults, and a variety of other pain-in-the-butt problems that take hours to troubleshoot.

Sometimes these problems start immediately after they may take up to 10 months. The customer then thinks as probably when they get their bill for a new CPU and/or motherboard (if you mean you don't know that something with the voltage setting affects the amount of current the CPU draws?) plus labor charged!

What gets me is that every new generation of computer "power users" think they were the ones that overtook a CPU. They also think that they are smarter than the combined wisdom of Intel, AMD and Cyrix engineers who most certainly would have rated a CPU to 450MHz (and then charged you for it) if the CPU was actually stable at that speed!

I can just see them sitting around the boardroom table now reading [overclocking guides] and saying "I didn't know that you could do that!"

Those of us who overclocked our XTs learned our lesson years ago.

Quotable:

Erig Thomson
President
Preston Computer Systems
Victoria

"You can fall in love with technology and what it will and won't do for you, but what we see a lack of, is people with a vision of reality when they want to accomplish."

— Douglas McGray writes *First & Pure*, or *Electronic Commerce's Schopenhauer* II



Letters to the Editor

We welcome your letters on industry issues and comments, as well as your comments on our magazine.

We reserve the right to edit your contributions for length and clarity.

Please write to *The Editor*, via e-mail at csletters@pc.ca, or fax: (804) 698-4958.

CORRECTION

On page 31 in the October issue of our magazine, the printer labelled us as the Brother 4940. 4940 was actually the Brother 4049C.

As well, the 9840 laser printer we tested (page 26) was the SuperScript 470, not the SuperScript 980.

We regret any confusion that may have occurred.


Watch that Readability!

I hold in my hands your September issue. After getting half way through your article on microprocessors, the magazine is closed and I find myself writing this letter!

Graphics are wonderful, colorful, eye-catching and used correctly will enhance the effectiveness of an article, but you know this, or do you? Check pages 48 and 49 and you will see what I mean.

Barton Gabor
Marketing manager
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CANADA WATCH

Hertec gets 3Com Connected

3Com Canada Inc. of Burlington, Ont., has signed up Montreal-based Hertec Enterprises Inc. in its 3Com Connected program — a leading program of resellers of Intel's very successful "Intel Inside" micro-processor line.

The Hertec franchise organization includes the Micrology Corporation, NorthWest Digital and ComputSmart (supplies). Millions in Hertec's distribution arm.

Under the program (http://www.3com.com/canada/3com_connected), Hertec will retail

and configure networks and Internet solutions in its desktop and notebook offerings and in university centres. And all products will display the 3Com Connected logo. Hertec was the first Canadian partner to participate in the program.



Imports last 3Com and Hertec Multimedia for an information session on 3Com Connected.

Compaq's Digital is a done deal

On Oct. 3, Compaq Canada Inc. held a press briefing in Toronto to announce that the integration of Digital Equipment Corporation's is now, expanded Compaq Canada is now complete.

Peter Coors, president and managing director of Compaq Canada, said "Our future success in Canada will depend upon our ability to effectively and efficiently integrate Compaq, Digital and Tandem into one organization, which we have now accomplished. The most important aspect of the process was ensuring the Digital and Tandem customers that Compaq is committed to them — as well as to the products and services they rely on to run their businesses, which we have also now achieved."

The new Compaq Canada has three basic sales engi-



Compaq P1000 P1000s

neers: three service departments and two marketing groups. The sales divisions are channel sales — directed by Ross Hulse, consumer sales — directed by Ralph Hyatt, and national sales — directed by Pat Ward. The marketing organizations are corporate marketing — led by John Boyd, and enterprise systems and solutions — headed by Reg Belside.

All the other departments of the three merged companies have been reorganized, resulting in combined legal, human resources, information management, finance, operations and leasing departments. Compaq Canada will continue to sell its products through a network of 3,000 partners accepting some "enterprise technologies and services" — mainly the enterprise customers — which Compaq will continue to sell directly.

Coors said Compaq will honor existing Digital and Tandem product warranties. "Compaq, Digital and Tandem have agreed to meet their respective customers' business and the new company places a very high value on these relationships."

Compaq is also rapidly updating its corporate on-site workstation line with the release of the new A900 model. This is a rack-mountable workstation workstation with support for either single or dual Intel Pentium II processors running at 400MHz or 450MHz; the Compaq PowerStation 300 graphics workstation, and four 100MB per Minute Ultra SCSI hard drives.

No crypto restrictions for Canada

W3 — The Canadian government will not impose any restrictions on the use, development and export of cryptographic software, employed to scramble data to ensure secure electronic communications, and electronic commerce transactions over networks such as the Internet.

The Canadian cryptography policy was announced by John Manley, minister of industry, as an "essential" component of the country's electronic commerce strategy.

Canada will be allowed to develop, import and use whatever cryptographic products they wish under the new policy, a move to intelligence agencies pushing for stronger controls both in Canada and in the U.S.

The Canadian government has decided not to impose mandatory key recovery requirements on a licensing regime. Some governments are considering legislation that requires users of cryptography to hand over their keys to the government so that communications could be read if need be by the state.

"This policy is good for the Canadian economy," said Manley. "It supports the increased use of electronic commerce products and services in Canada, as well as the export of Canadian information technologies to other countries."

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LG Electronics is boosting the brand

LG Electronics is engaged in an aggressive re-branding of the company's identity and a migration of its products up market from the budget PC space to the corporate market.

In a process that has been underway in Canada since the summer, and which will be continued through 1998, the Goldstar brand and product models will be replaced by the LG logo and a more, more, highly focused, corporate-oriented product line. Already, LG-branded monitors such as the 15-inch LG 500C, an innovative ring monitor with resolution up to 1,000 by 1,000 pixels at 200-cdot size targeted at business computing professionals.

Other current leading-edge LG computer products, in addition to a full line of professional quality CRT monitors, include: the LG 500 C — a 15-inch active matrix flat panel display; the LG Phoenix line of notebook PCs (an enhanced version of which is set to debut in Canada in 1998), the 1000-8480 C5 1000 MHz drive, and portable and desktop PC CD ROM drives.

LG Electronics has also rolled out its own aggressive reseller program. The reseller part of the program offers marketing funds, volume rebates, price protection, distributor user rebates, an evaluation cost program, an employee purchase program and lead referrals.



LG 500C

Sony is sweet on storage

Sony of Canada Ltd. has announced a new line of Storage by Sony products — a range of products aimed at the B2B, small business and consumer markets.

In keeping with Sony's tradition of innovative technology from rather than "me-too," low margin products, the new line includes the CRW100SH — a CD-Rewritable (burnable) based on a drive with 40 GB recording and 24 GB CD-RAM loading speeds (the list price is \$399). The Sony DCRD20H is a DV-DVD-RW hybrid, and includes a Realtime DVO decoder card for optimized digital video playback quality and speed. The new Sony Spinnex external CD-R drive also has industry-leading 40 recording speed, and is available for both Mac and PC for \$795. As well,

Sony's Formated electronic video mail product (SE200) — a consumer bundle of video camera, mail capture card and software — allows users to create personal video e-mail and send it via their Web browser's e-mail package.

According to Michael Argel, marketing manager, mass storage products, for the computer products division at Sony of Canada Ltd., "The growth of the Internet has created a major increase in the amount of storage required for today's consumers and business organizations. Storage devices are more important than ever as businesses and consumers are realizing it's more costly to replace lost or corrupted data than to invest in storage solutions up front." □



Michael Argel, Sony computer product division

Contact The Editor

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Canadian Computer Wholesaler welcomes your comments on material relevant to the market plus your feedback on our publication.

NEWS

We welcome your leading industry news and feature items for Canadian Computer Wholesaler. Feel free to contact the editors directly with your suggestions.

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PORTABLE

Power Redefined?



by
David Tensho

Of course, portable computers have become fertile ground for designers and developers.

But vendors now abound (or are coming) on the basic Intel-powered notebook that has defined portable computing since the early '90s.

Not Just Intel Inside

Maximum notebook computers have usually been equipped with mobile versions of Intel Corp.'s Pentium and Pentium II processors. These come in smaller packaging, require less energy and generate less heat than CPUs intended for desktop computers.

Now Advanced Micro Devices Inc. hopes to capture some of the portable market with a mobile processor of its own — the mobile K-6. Indeed, the company has introduced a 300MHz version of the mobile K-6. AMD says its "on-chip gate-array 386" chip consumes less than 6.6 watts and generates less heat than the standard K-6 processor. It is available in two packaging formats, taking up as little space as one square inch. Meanwhile, Compaq Computer Corp. has announced the Presario 1250, which the company says is the first notebook to use the 300-MHz AMD-K6 processor, although other manufacturers have also announced K-6-powered notebooks.

Compaq doesn't seem to be afraid to stray from the Intel-only fold, and also has a Presario model that uses the Cyrix MediaGX integrated processor.

And the Cyrix chip is proving to be popular in a relatively new sub-category of portable computer — the mini notebook.

The Rise of the Mini-Notebook

Recently, Palmax in Taiwan and Casio Inc. in Japan announced their intention to introduce mini-notebooks, and both have chosen the Cyrix MediaGX processor to power the units. According to Palmax, its two-pound PD-1000 will measure 8.4 by 4.4 by 1.4 inches and will have a 6.1-inch touch-screen display. It will use Windows 95 as its operating system, and will also contain a hard drive.

Details on Casio's unit were not available, but it will be called the AS, and the company says it will be available in Japan by the end of the year.

Both companies say that because the MediaGX chip integrates several functions (graphics, audio and memory control) with the CPU, it is less expensive while being more energy efficient.

Toshiba America Inc. can be credited with introducing the mini-notebook to North America. Toshiba outsourced customers here when it introduced the Libretto, a Pentium-powered mini-notebook about the size of a video-cassette. However, even before its launch on this side of the Pacific Ocean, the Libretto had been available in Japan.

Hitachi, IBM Corp. and Panasonic also had mini-notebook models but they were intended for Asian markets and were not readily available here.

Redefining Portability

Intel has also announced a lower-power version of its Pentium MMX processor, which is targeted for use in mini-notebooks. The company says it has reduced the 266MHz processor's core voltage of 1.8 volts, which reduces its power consumption to less than five watts. Intel made the announcement in September during its Intel Developer Forum.

At the same time, Intel announced its Mobile Power Guidelines 2000. The company says the guidelines were developed with industry partners, and are intended as guidelines for power-consumption targets for portable systems built in the year 2000.

The guidelines are not too surprising, in that they call for the industry to increase performance while holding the line on power consumption. Thus, the guidelines call for the power consumption of portables made in 2000 not to exceed the consumption of systems made in 1999.

Intel says its new 300MHz Pentium II mobile processor demonstrates that this is achievable. The 300MHz processor offers more performance than the 266MHz version, but consumes about the same amount of power.

Intel says it will also be providing development tools and guidelines to help systems developers improve the efficiency of their Advanced Configuration and Power Interface (ACPI) implementations. ACPI is a power management specification for portable computers originally developed by Microsoft Corp., Toshiba and Intel.

For example, Intel's Power Management and Analysis tool can be used to measure power consumption in various ACPI states. Intel says developers can use this resulting information to optimize the power management in the systems they are designing.

Another aspect of the Mobile Power Guidelines 2000 addresses applications. Intel says it is working with software vendors on tools that will show developers to create applications that are "power-friendly." Presumably this means that applications will be able to ensure functioning properly after the portable computer is awakened from standby or a state of hibernation.

Given the continuing problematic nature, even on the most current portables, of awakening the systems with all the sub-functions intact, this alone will be a welcome advance in portable design. ■

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"The Mobile Power 2000 Guidelines are not too surprising, in that they call for the industry to increase performance while holding the line on power consumption."

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The GIGAntic Hard Drives!

Storage Needs are Exploding; So is Capacity.

by Sean Connolly

Do you remember when a 30MB hard drive seemed astonishingly large?

Just a few years ago, that was an excess of space for any of the consumer platforms available. Then when drive sizes broke the gigabyte threshold, many people thought a 1GB drive was ridiculously big. Who would ever use that much space?

It's worth noting that a full install of the Windows 98 operating system can now eat up 350MB all by itself.

It's no surprise then that drive sizes are still climbing. With IBM's Deskstar line reaching 34.8GB (and with other companies meeting and beating that mark), drive manufacturers are starting to close in on 3.5-inch drives that are 1,000 times the size of the 30MB drive that once seemed so amazing.

To put the numbers into perspective: A hard drive with a 34.8GB capacity will hold more than 24 CD-ROMs in their entirety. That same drive will hold 11,666 floppy disks — a stack of floppies more than 130 feet tall!

The customers who will most need these drives will be power users, whether they be professionals who generate a lot of information, game players who are running the newest (and biggest) games or people generating multimedia content. There's also a growing segment of users who like to record music, store it in MP3 form, and then use their computers as jukeboxes.

Unfortunately, entry users may not be able to use drives of this size to their full advantage, or even at all. When a customer is buying one of the new drives, it's worth digging for a bit of information to prevent disappointment. Older PC operating systems using the FAT file system may be limited to partition sizes of 2 Gb. This includes users running under DOS, Windows 3.1, and the early version of Windows 95. Windows 95 and newer versions of Windows 95 can use the FAT32 file system, which supports partition sizes above 2 Gb.

(Note: this can also affect Windows NT users who choose to use the NTFS file system instead of NT's proprietary NTFS. Users of NTFS will be safe, as the file system has built in support for drive sizes far larger than the ones currently available.)

Even with operating systems that support for larger hard disk sizes, there still might be snafus at the BIOS level. Depending on the age of the system in question, the BIOS may choke on drives larger than 2MB, 4MB or 8MB. Although most of the larger drives come with a utilities disk, which can solve that problem, sometimes it will be necessary to perform a hardware upgrade on the BIOS before the system will be able to use a larger hard drive.

Hot Stuff! Wow!

One of the more recent developments in the field of hard drives is the increase in spindle speed from 5,400 rpm to a much faster 7,200 rpm. Where older drives used ball bearings, the 7,200 rpm drives use fluid dynamic bearing motors, allowing for faster, quieter and more reliable operations. The unfortunate side effect of the 7,200 rpm drives is that they generate a lot of heat. It's not overrating the matter to say that you can (and will) burn yourself if you touch a 7,200-rpm drive while it's running. Granted, this isn't something most users will do. This points to another side effect: the heat thrown off by the faster drives will raise the temperature inside a sealed computer case. For systems that aren't well-ventilated, this could be a problem, shortening not only the life of the drive, but of other components in the case. An additional cooling fan may be a worthwhile purchase.

Setting the Products

This month, we asked vendors to send us desktop 3.5-inch hard drives, in both 5,400 rpm and 7,200 rpm models around 10GB or bigger.

The testing was performed in the Windows 98 environment using a Myra Mycomp system, with a 300MHz AMD K5 CPU, 64MB of RAM with a 128KB cache, a 4MB ATI AgniVIVO video card (set to a resolution of 1024 by 768 with 16 bit color depth at a 60Hz refresh rate), and a 32X Maxam CD-ROM drive. Windows 98 was set up on each individual hard drive in an identical fashion, and drives were swapped in and out of the Mycomp, so that all other variables would be identical.

Drives were formatted using the GPT file system, and were formatted to use larger partitions that was the complete size of the drive. ATI display software was installed on all drives, as was a driver for the Brother HL-10600X laser printer.

Benchmarking was done with the Ziff Davis' WinBench'99 version 1.0 desktop software. These tests were performed with a single file in verification by 256 bytes and 256 drives makes no representation or warranty as to their results. WinBench is a registered trademark of Ziff-Davis Inc. in the U.S. and other countries. It can be downloaded for individual use at <http://www.zdtp.com>.





Fujitsu's New PB-12 Drives:
***SUPERCHARGED.
 SUPERCAPACITY.***

Give your systems a power boost with Fujitsu's new Probad 12 Series hard drives. They're supercharged for performance, with spindle speeds up to 7,200 rpm, and you can choose from capacities ranging from 3.24 Gb to 10.2 Gb. Call your distributor today, and rev up your systems with Fujitsu drives!

IDE Hard Drives	Probad 12 Series					Probad 12H
	MP1200004	MP1200044	MP1200044	MP1200044	MP1200044	MP1200044
Capacity (formatted)	3.24 Gb	4.24 Gb	5.24 Gb	6.24 Gb	7.24 Gb	10.2 Gb
Interface	ATA-3 / UltraDMA					ATA-3 / UltraDMA
Average Seek Time	10.0 ms					10.0 ms
Rotational Speed	7,200 rpm					5,400 rpm
Buffer Size	655 Kb					128 Kb
Data Transfer Rate	17.4 to 18.0 MB/sec					12.4 to 13.0 MB/sec
ATA DMA	UDMA (PIO/IDE)					UDMA (PIO)
Warranty	3 years					3 years

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The 5,400 rpm Drives

Fujitsu MPC2020AT

Price: \$225 SFP

Highlights:

- The 10,200 drive offers plenty of space
- The drive comes with a three-year warranty
- The \$225 SFP is competitive
- This is one of the faster drives tested.

Fujitsu's new MPC2020AT series of drives features a higher recording density, allowing the drive to have less platters (and consequently ensuring greater reliability). The 3100 is at the top end of this list, size-wise. Drive performance is good, and it should offer more than enough space for most users, at a good price.

Maxtor DiamondMax 310000

Price: \$225 SFP

Highlights:

- Although not quite as large as the IBM, 12,000 is still an awful lot of storage space
- The \$199 SFP is higher-priced than other drives, but the pricing comes back into line when considering price per gigabyte
- Performance on the drive was very good
- The warranty period is three years

Maxtor's DiamondMax 3100 series offers high-density platters and high performance. The 310000 model is at the top of this list, and performance during testing was excellent. At 12,000, the amount of storage space is almost excessive, although the price point at this model is bound to appeal to both the high-performance user and the average user with an eye on their future storage requirements.

Samsung VQ2000M

Price: \$235 street

Highlights:

- The VQ2000M is currently the largest-capacity hard drive in the Samsung line. Although not quite at the 10,000 mark, the 8,400 drive still has sufficient space for a good number of users
- Because of the lower cost, the price on the unit is also lower
- The warranty period for the drive is three years

Even though the model isn't 10,000, it may be worth consideration for users who don't have a lot of immediate space requirements, but may need their drive down the road. Although a less-than-capacity and slower performance, it's certainly adequate for a good chunk of years out there.

IBM Deskstar 160P

Price: \$225 SFP

Highlights:

- 12,000 is far more space than most humans currently need
- At \$225 SFP, this drive is not cheap. That's understandable, though, because of the size
- Performance on the drive was excellent
- The warranty period for the Deskstar 160P is three years

When it comes to sheer size amongst the drives tested this month, the Deskstar 160P wins hands-down. The biggest question is, who is going to need that much space? For now, the 160P will be a specialty item (especially since the price is almost double that of anything else in the roundup) and not of much interest to the average shopper. For the user doing a lot of multimedia work with 3D rendering or sound recording, the excellent performance and large capacity will be very attractive.

Quantum Fireball BL 10.2

Price: \$229 street (average sample)

Highlights:

- At just over 1GB, the Fireball BL 10.2 offers a lot of storage space
- Performance of this drive was the highest of the 5,400 rpm models tested (and even outperformed one of the 7,200 rpm drives)
- The price point for this model is very attractive
- The warranty period for the drive is three years

The 10.2 is at the top end of Quantum's Fireball BL line, and the performance of the unit was top-notch. Most users should be happy with the storage available on this unit, and the pricing is also a very attractive selling point. Overall, this drive is a great pick.

Thanks to Samsung Computer for supplying us with the drive for testing (Samsung, contact (800) 440-1000, <http://www.pcmag.com>)

Best Overall... Recommended... Editor's Choice!



LT12WQ, 12" LCD

FT15G, 14.8" LCD
Computing Canada, March 1998

BT16, 16" LCD

"One of the most impressive flat panels ever unveiled in the 16-inch Sceptre BT16." "Sceptre has probably done more to develop the flat panel market... than any other manufacturer. This company has a broad base of flat panel monitors and has been the leader in pushing the cost of flat panel monitors down—a benefit of being a major manufacturer of LCDs."

Jeff Evans—*Computer Paper, July 1998*

Sceptre's entire lineup of innovative flat-panel LCD monitors won Canadian Computer Wholesaler's prestigious Innovation 98 Award for technical excellence. Call Sceptre and find how easy (and affordable) it is to see for yourself why!



"When it comes to making top quality monitors at very competitive prices, Sceptre has all the angles covered."

The Computer Paper, May 1998



The Sceptre D97A won awarded Canadian Computer Wholesaler's prestigious Innovation 98 Award for technical excellence at Computer Plus Film.

"The picture on the D97A is extremely sharp, dark backgrounds are very deep and faces are clear. Overall the the Sceptre D97A is a great monitor for a decent price."

Computing Canada, April 1998



Dragon Eye D97A
19" CRT, 18" dia. view
Computing Canada, April 1998



Dragon Eye D75A
17" CRT, 16" dia. view
Best Overall, Computer Paper, July 1998
Best Overall, CCM, August 1998



Dragon Eye D84
15" CRT, 14" dia. view
Editors choice, Computer Paper, May 1998

For the dealer location nearest you call 800-350-8909
For more information regarding Sceptre products visit our website at www.sceptre.com


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**Western Digital Caviar 10.1****Price:** \$449**Highlights:**

- This drive has 10,100 of storage space.
- It comes with Western Digital's Data Lifeguard technology, which "detects, isolates and repairs problem areas" on the disk.
- Performance for the drive was good.
- The warranty period is three years.

The Caviar 10.1 is a good addition to a system, with sufficient space for most users, and good performance during benchmarking. The drive also features Data Lifeguard, which is supposed to solve bad sector problems before they even happen. This product is definitely worth consideration.

Seagate Modelist 16240**Price:** \$339 (converted from USD)**Highlights:**

- With 16,384 of storage space, the 16240 has plenty of room for most users.
- Lower buffer size (only 128KB) caused the drive's performance to suffer a bit compared to drives with 256KB or 512KB buffer size. Still, performance was good.
- Pricing on the unit is competitive.
- The warranty period for the drive is three years.

A larger buffer size on this drive would have been nice, but despite that limitation, the Modelist 16240 offers plenty of space at a reasonable price. For users who are more concerned about storage capacity and value than with raw transfer speed, this is still a nice little drive.



The 7,200 rpm Drives

Maxtor DiamondMax Plus 9100008**Price:** \$455 (99¢)**Highlights:**

- The 7,200 rpm spindle speed means excellent performance over the 5,400 rpm line.
- There's a lot of room, with 16GB of storage space.
- The drive generates a lot of heat. Users should consider an additional cooling fan.
- The warranty period for the drive is three years.

The 9100008 is the largest drive in Maxtor's performance-oriented DiamondMax Plus 3500-line of drives. With 16GB of space, and the performance boost resulting from the higher spindle speed, this is a drive that's bound to appeal to a broad range of users.

Seagate Modelist Pro 5140**Price:** \$425 (converted from USD)**Highlights:**

- With 5,120 of space, the drive still offers plenty of space for most users.
- The 7,200 rpm spindle speed means excellent performance. The 5140 had the best overall speed of the drives looked at this month.
- The drive generates a lot of heat. Users should consider an additional cooling fan.
- The warranty period for the drive is three years.

Currently the largest drive in Seagate's Modelist Pro line, the 5140 marks an excellent performance with a reasonable price point. Sure, the drive isn't 16GB, but 5,120 offers enough space that few users would complain. [E]



Editors' Choice

Overall**Quantum Fireball 5L 10.2**

The Quantum Fireball 5L 10.2 not only offered more than 10GB at a reasonable price, it also achieved the best scores of all the 5400 rpm drives tested this month. This drive would be suitable for both the regular user with a thirst for storage, or the more demanding user who has more of a need for performance.

Performance**Seagate Modelist Pro 5140**

Although it's one of the smaller drives tested this month, the Seagate Modelist Pro 5140 offers ample space for most users, excellent performance and a reasonable price to boot. This should be a drive that will attract a wide variety of users. [B]

See *Connectors in Lab Test* section for *Connectors Computer Workbooks*. No one is needed to own it (p. 10).

KDS

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looking at?

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Number One Rated 21" Korean Monitor by PC World Magazine

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When you buy a Visual Sensations™ or Avitron® monitor,
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LAB TEST



Drive Specifications

Specified capacity (GB)

Platters

Rotational latency

Access latency (ms)

Interface type

Buffer size (MB)

Rated transfer speed
to host (megabytes/sec)

Rated transfer speed
to disk (megabytes/sec)

Average seek (ms)

Idle rate (rpm)

Mean time between failures (years)

Access rate (MB/s)

Warranty

Price

Capacity

Web site

Drive Benchmarks

3D Bench Workload 3D (1GB file)

Business disk Workload 3D
(1GB file)

High-end disk Workload 3D
(1GB file)

Disk Playbench/Seagate
Overall (1GB file)

Spins/second/Access
(1GB file)

Short program (1GB)
(1GB file)

Full disk (1GB file)

Reference (1GB file)

Task switching
(1GB file)

Disk Playbench/High-end

Overall (1GB file)

APC/Access (1GB file)

SmallPage (1GB file)

Workload 3D (1GB file)

Playbench 3D (1GB file)

Reference (1GB file)

PS-Play (1GB file)

Visual (1GB file)

Efficient random access
(1GB file)

Media/Access rate

Regularity (1GB file)

Real (1GB file)

Globalized I/O efficiency
(per cent read)

Seagate MP1040L7

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ATA-6

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IBM Deskstar 75GP

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Maxtor DiamondMax 10C002

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**Seagate VST1600**

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Ultra ATA
15.2
up to 15.2

up to 100 megabytes/sec

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\$60,000
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\$500 street
\$299 (S&H \$25)
where available call

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**Seagate Modulator 1024**

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up to 15.2

up to 100 megabytes/sec

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**Western Digital Encore II.1**

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up to 15.2

up to 100 megabytes/sec

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**Seagate Modulator Pro 1024**

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We also tested the 300MHz Celeron-A, in comparison with over-clocking-directly motherboard-like the Abit BH-6, to be a popular model with upgrade and value-conscious buyers.

For Super7 systems, we chose an AMD K6-2 300 — again, a chip with legs. We coded this CPU with a CPU Cooler brand fan. Sure, there are better ones, but this ball-bearing fan/cooler-unit combo does the trick at the right price (about \$5.95).

Putting It All Together

A floppy disk, with a CD-ROM driver on it, such as is created during the installation of Windows 95, is the easiest way to get a new system up and running. Alternatively, you might find it convenient to format a hard drive on another computer, and copy the Win95 directory to your hard drive.

We configured our test systems using some or all of the following:

- Toshiba SCSI CD-ROM drive,
- BCD-36K IDE CD-ROM drive,
- Fujitsu UDMA 2 (IDE) or hard drive,
- Seagate Modeler Pro UDMA 2 (IDE) hard drive,
- ATI All-in-Wonder PCI graphics card,
- Leadtek Winfast 2300 AGP graphics card,
- Creative Sound Blaster 32,
- 3Com EtherLink XL TPO 10MB PCI network card,
- NEC floppy drive,
- Windows 95, Windows NT 3.0 beta 3, and,
- 64MB PC100 SDRAM.

Slot 1/BX Boards

Abit BH-6 (<http://www.abit.com.tw>) — This board is less expensive than the BX-6 that preceded it, and in many ways a better product, despite having one less DIMM socket. It provides two PCI slots (two ISA), and a truly innovative feature sure to be popular with performance buffs. You see, the BX-6 and BH-6 are unique in their ability to set the core voltage for the CPU, and the BH-6 goes further by providing software control over the status of the SCL105658 signal, allowing Celeron Slot 1 (dupl) Celeron, Celeron-A and Pentium II processors — even recent chips with locked multipliers — to be easily and effectively over-clocked.

The Abit is our *Overclocker's Choice* among BX boards. It is priced at US\$125.

Asus P2B95 (Slot 1) (<http://www.asustek.com>) — No complaints! Clearly labeled electrical components on the Asus motherboard and its data extra included with the US\$165 P2B95, such as nylon straps to tie cables out of the way, extra jumpers and non-conductive washers to help isolate the motherboard from the metal case, made the installation speedy and convenient. And having SCSI onboard — especially SCSI as versatile and powerful as that provided by the three onboard connectors (80MB Ultra SCSI 2, Wide and Narrow) clinched this model as one of our favorites. Users looking to maximize the benefits of "no available IRQs" should definitely consider a motherboard with onboard SCSI. With a benchmark score as our first second look to the Aspen A368 Plus, this is our *Quality Board* choice in the BX category.

Aspen A368 Plus (<http://www.aspen-int.com>) — (Including onboard U/W SCSI) This board we received was unfortunately marred by not just two but fairly serious (but non-damaging and easily removable) solder blobs on the motherboard. Presumably, this is not a common occurrence, but it was troubling, nonetheless. Performance was better than average, particularly when we substituted a Pentium III-based AGP card for the ATI Rage Pro via our standard test on Win the Pentium 3. The composite benchmark score shot up to 372.

— an impressive 15 per cent improvement. With the Rage Pro, the A368 Plus scored a 325 on our Bapco test — still about 2 per cent faster than the Abit BH-6 or the SCSI-equipped QDI Brilliant IV board, but the BH-6 actually presents more opportunities for performance enhancement via its multiplier-unlocking capability. Still, the A368 Plus is a performance champ in its own right and, solder blobs notwithstanding, the board was no trouble to set up and configure. The A368 boards were fastest overall on both the Slot 1 and Socket 7 categories, of all the boards tested in this three-part review. The A368 Plus is priced at \$299.

Gigabyte GA-68XC (<http://www.gigabyte.com>) — This board rated a 316 on our initial Bapco tests, but by setting a Turbo jumper and using the recommended Performance settings as listed in the manual, the Bapco benchmark result jumped to 323. (We did not over-clock the CPU or FSB.) The manual provides descriptions of optional performance settings for the BIOS, but provides a most one-line description of the Turbo setting, intended primarily for use with 100MHz-bus frequencies.

Legend-QDI Brilliant IV

(<http://www.qdi.com>) —

This motherboard was the most full-featured board we tested (about 16 slots, 100MHz/66MHz EMM64 and Ultra Wide SCSI), but a few items concerned us. The board needed more fiddling than most to set up and configure the BIOS and Power Management settings. It fell with the BH-6 on Bapco benchmark scores — rating a respectable 317 — a mere two per cent lower than the performance leader.

Shuttle HOT-661

(<http://www.spacewalker.com>) —

Initially, we liked the look of the impressive Pentium II retention bracket shipped with this motherboard. It seems like a great idea — a Pentium II mount that doesn't require those fiddly screws. You just drop it over the SBC slot and push down on the plastic pins. However, we found it to be problematic and it required a great deal of force to press down properly (good luck if you ever want to remove it).

Perhaps others will have a

better experience with Shuttle's snap-in retention (found it certainly has the potential to speed up system build times), but we ended up discrediting ours in favor of the screw-down type. Once the system was built, we found Shuttle's BIOS-controlled CPU speed menu to be quite convenient although for board's lack of Green LED speakers and Sleep Switch connectors to be very unusual and frankly, quite disappointing. The board seemed to work equally well with both 66MHz and PC100 SDRAM. The product is priced at US\$129.

The Celeron-A no longer deserves its bad rap

The original Celeron lagged behind the Pentium II primarily due to its lack of Level 2 cache. The Celeron also officially lacked the ability to run an system with a 100MHz bus. However, subsequent tests have proven that over-clocking the Celeron is indeed possible.

But the Celeron-A, has another feature that helped perform almost as well as a much more expensive Pentium II chip. In Intel's expensive P140, the Celeron-A has a 128KB Level 2 cache running at CPU clock speed (the Xeon has a 512KB or 1 MB Level-2 cache running at clock speed). The Pentium II, with 256KB of L2 cache, has more cache memory than the Celeron-A, but it runs at half the clock speed.

The new design helps a Celeron-A make benchmark and real-world performance within a few per cent International Data Corp. says the Celeron-A is about five per cent slower (on average) of a Pentium II running at the same bus speed. It's worth considering. Incidentally, AMD's forthcoming revision of the K6-2, code-named Shequath, is said to have 256KB of cache — half the cache of a Pentium II — but running at CPU speed like the Celeron-A. This should help that chip keep pace in the ever-accelerating world of CPU over-clocking.

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Super 7 Boards

Asus P5A-B (<http://www.asus.com>) — This was one of our favorite Super 7 motherboards, despite the fact that several other boards were a little faster. The Asus P5A-B was the most trouble-free Socket 7 board tested, helped in part by a concise and easy-to-follow manual. We had no trouble with 66MHz or PC100 memory. We also liked the board's optional serial capability, with a generous array of two CD and one MPX2 audio connectors, plus digital and analog audio I/O (including S/PDIF output), and a game-port connector. Supplied post-sockets provide a PS/2 port, AT and XT serial, and a parallel port. An optional card adds USB connections and IR capabilities. Best of all, this board fully supports hot-off during ATX sleep mode. (An ATX power connector is also provided), which doesn't provide ATX-specific suspend mode (again, sorry.) The Asus packaging and documentation are of superior quality, making the product well-suited as an end-user desktop power upgrade.

Adapco A350Pro (<http://www.adapco.com>) — For those who want maximum performance, the Adapco A350Pro (\$195) is an excellent choice. The specialized Socket 7 board tested to date, it rated an impressive 286 on our Bapco benchmark tests, placing it about 10 per cent above the Asus P5A-B in some of overall speed. Graphics performance was exceptional, getting best-of-field performance (in the Socket 7 category) in the CoreDraw and PageMaker benchmark tests. It includes both SIMM and DIMM sockets and supports a 133MHz external clock, further strengthening its appeal to upgraders. The multilingual documentation includes a quick reference booklet to help experienced system builders get the switches and jumpers set up quickly.

Gaenware SVPA (<http://www.gaenware.com>) — A confusing mother-board manual (26 pages) and a few configuration problems made the installation of components a bit more stressful than things might have been, but performance was surprisingly good on this inexpensive (\$155) board. Probably as a result of its ability to successfully run with the RAM synced to the 100MHz CPU clock, this board rated a 277 in our Bapco tests — a little faster than the DFI PSBV3+. Perhaps we've just got lucky, but we noticed what seemed to be a definite trend with the boards based on the VIA Apollo MV93 chipset: we had more network card IRQ troubles (even with PCI NICs) and more system startup problems overall. On the flip side, the MV93 chipset's ability to run memory asynchronously makes boards based on the VIA chipset more appealing to overclockers than those based on the ALU set. Overall, though, this board was ahead of the DFI product in both ease of configuration and performance.

DFI PSBV3+ (\$10-\$21-\$319) — We found better quality sockets on the DFI PSBV3+, which also uses the MV93 chipset. It provides both AT and ATX power connectors. This board, which used an impressive 276 on our Bapco benchmark test that the Asus P5A-B rated only a 260 on, will be attractive to those looking for a Super 7 board with a one-way cache. This led to best-of-field performance in the CoreDraw, PageMaker, Paintbox and WordPro tests in our benchmark suite, although graphics performance was only low in the CoreDraw and PageMaker tests. That board includes 4xPCI and 1xISA slots — although our mostly unsuccessful attempts to connect it into running anything faster than "Turbo" mode on 66MHz memory suggest those hoping to leverage its existing set of SIMMs or LX-type DIMMs may have some difficulties.

The manual comes up short on the subject of possible RAM configurations, and the DFI board was the most sensitive to SDRAM speed of all the boards tested. When we tested it with 66MHz (LX type) SDRAM clocked to the 66MHz MOP clock, that worked well in several other machines, the DFI board couldn't even run some of the benchmarks. We found that the system wouldn't boot at all when the

66MHz SDRAM was synced to the CPU clock, and the Sept. '95 BIOS update left our Windows startup screen with bits of garbage scattered throughout.

Gigabyte GA-SAX (<http://www.gigabyte.com>) — This board (based on the ALU chipset) will appeal to those wanting plenty of future

growth potential in a Super 7 design. 4x PCI and 1x ISA, with three DIMM sockets are complemented by a pair of PS/2 ports and two USB ports. As for the ubiquitous "IC" in a board name usually implies, it's an ATX format board. When choosing a mother-board, it is important to look beyond the number of slots and raw space to consider the board layout itself. Baby AT boards such as the DFI PSBV3+ typically place the CPU socket close to the expansion slots, severely limiting the number of full-length cards that can be used. The DFI board, for example, cannot use full-length PCI cards in three of its four PCI slots. In an ATX design such as the Gigabyte GS-SAX, on the other hand, none of the slots are blocked.

Despite those limitations, there's still a healthy market for Baby AT form-factor Socket 7 system boards. They are typically equipped with both AT and ATX power supply connectors and provide upgraders with an easier installation path than the new card-to-motherboard/power/RAM/keyboard/adaptor demands of an all-ATX solution. Note, however, that advanced features such as "hot power off" and ACPI power management require ATX power.

Matsushita MS6360S — Turning to a Bapco benchmark result of 286, the Matsushita MS6360S was the fastest board of all the Super 7 products we tested and it is one of the most nicely featured, too. Its unusually tight sockets, however, made it one of the most difficult motherboards to install. SDRAM note: Other than that, we were pleased with the feature-set of the MS6360S. Equipped with 1024KB of Level-2 cache, on-board audio and support for either ATX or ATX-type power, this motherboard was one of the few we looked at that used an AMI BIOS. It comes with a port card for two USB and a PS/2 mouse port (plus another mini-DIN port, labeled IR), a separate port card providing a game port and sound I/O, and even a S/PDIF (N cable — A jumper is available for an optional S/PDIF OUT digital connector as well.) The sound card provides Aureal 3D drivers, software selectable, HRTF (head-related transfer function) positional audio, and Dolbyized 3D. It all adds up to a nearly ideal gaming system. PC-ciller and TurboChapMan Vetus are provided for virus protection.

Matsushita (\$265) is our pick for **Super 7 Performance Board**.

To see the specifications of numerous motherboards discussed over the last three issues, please see <http://ftp.cwi.ca/bvnews/motherboards/95/>

Graeme Bennett is Senior Editor at The Computer Paper. He can be reached at graeme@cp.ca.

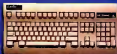


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Making Contact

New Input Technology Is Key to New Computer Form Factors, Applications and Markets

by Jeff Evers

You may have noticed the average desktop PC comes with two input devices: a keyboard and a mouse. Likewise, the average notebook PC has a somewhat smaller keyboard, and now ships with either a touch-pad or an erasertab-style pointing-device near the center of the keyboard.

But That's All Changing.

Since the keyboard/mouse combination slipped as a standard fixture on the original Apple Macintosh in 1978, it has been a fairly workable solution to let computer users input data and instructions into computers. But in the computer industry, nothing stays the same for very long.

The keyboard and mouse still offer many advantages compared to other input devices and will be with us for a while yet. But they are being increasingly supplemented by a variety of new or improved input technologies. These include voice and pen input, and many special-purpose devices such as video cameras and game controllers. As well, the keyboard and mouse are themselves undergoing changes, intended to improve safety, ease of use and productivity.

In the real-world, change is good, as it equals potential new sales and profit opportunities.

Madam, I'm Adam

The basic thing to remember in input technology is: Any input device is used by a human being. No matter how impressive the technology, unless it really makes computing easier for the average person, it will not succeed. Throughout history, people have consistently communicated with each other by voice, facial expression, gesture and body language. Earlier information technologies included written text, musical art, music, dance, photography, cinema and TV. Successful input devices build on the way people prefer to communicate.

Talk to the Animals

Computers aren't a kind of artificial human being. Rather, they're information tools built for people to use. From their inception, computers posed a dilemma: how do you talk to machines? How do you tell them what to do? Initially, the answer was: with great difficulty. Interacting with computers was a specialty of highly trained professionals and technicians only, and it was very difficult and slow process. As information tools, computers are in some ways simplified, limited mirror images of human thoughts and memories, but they lack any inherent sense of means of communicating with users. The industry needs to provide input and output devices to allow people to truly connect to (and with) the machine.

Person/Machine Interface

A few companies have defined the ways that people can input, retrieve data to computer systems, including Xerox Corp. That company's



Palo Alto Research Center (PARC) in California was a focus of innovation in person-computer interface, including windowing, graphical user interfaces, icons and pointing devices. Xerox got little benefit from most of these innovations, since it didn't think to use them in conjunction with a general-purpose PC platform.

Apple Computer has borrowed many of PARC's brightest ideas in input devices and user interfaces for its Lisa and Macintosh computers.

IBM Corp. has vast research programs in nearly every aspect of computing, including input technologies, and has contributed much of the fundamental voice technology that is only now beginning to be widely used. It has also developed the TrackPoint pointing device, which is widely used on notebook computers.

Logitech has done much experimentation with ergonomic design in mice, keyboards and game controllers — helping to popularize a curvy, ergonomic look to input hardware.

The RSI Plague

One unexpected consequence of the keyboard and mouse as basic input devices has been an epidemic of Repetitive Strain Injury, the result of too many hours spent inputting data into computers using poorly designed input devices.

RSI is a major problem that affects millions of computer users. It can effectively destroy workers' ability to effectively use their hands. But the condition can be largely prevented. Today's solutions include ergonomic keyboards with palm rests, better designed mice and pointing platforms, and careful avoidance of too much time at the keyboard or mouse without breaks or exercise.

They Also Serve

There are many other input technologies that have attracted a sizeable user base.

Trackballs, though largely displaced by mice, touch-pads and touch-picks, are still found on some devices. Of course, there is a major market for joysticks, game-picks and driving wheels among the gaming population for both personal computers and video game consoles. Special gaming devices such as guns for shoot-'em-up games, and data gloves and motion-tracking display helmets for 3D virtual reality systems have small specialty niches.

An unproven "interactive" input technology by Canada's World Group employs the digital video image of the user as an input device that allows the user to interact physically with a computer-generated environment. This technology, called the Mandala, is used at hundreds of high-profile interactive entertainment sites around the world, including the Smithsonian Institution and the Canadian Hockey Hall of Fame in Toronto.

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Special Needs

At least in theory, innovation in computing is about making people's lives better. Research into special needs has often translated into innovative products that offer new input technology options. For example, voice recognition and computer-generated speech have been developed, at least partly, to address the needs of blind computer users.

A new generation of wearable computers, which communicate their presence via wireless or nearby beeping machines and other networked devices, were initially designed to allow people with mobility or minimal control problems to interact with computers.

While these may not often be much money in special products for the visually impaired, the deaf, or people with motor-control problems, these are still important user constituencies for the development of better, more appropriate input devices. By learning to meet the special requirements of the disabled, the technology industry is learning to create better input solutions for the mainstream population.

Hottest Trends in Input

Without a doubt, the main opportunities for readers are in the mainstream input devices: ergonomic keyboards such as those from Microsoft, Compaq, Acer and Logitech, new formats of mouse, which include scrolling and improved ergonomic design, and voice recognition solutions from IBM, Lernout & Hauspie and Dragon Systems.

Seller Beware

Don't disregard the particular needs of the customer. One keyboard isn't all, right? Wrong. Some computer users have big, hairy fingers and have great difficulty using any notebook computer keyboards. Similarly, some small-handed people find split keyboards simply too big to comfortably reach all the keys.

Voice recognition installations may fail if the computer the software is being installed on is not powerful enough to handle the

substantial processing load voice recognition requires. If the microphones or sound cards is of low quality, the data the voice input software is trying to interpret may be garbled. Similarly, if the model of the particular PC being used generates a lot of electrical interference, this "noise" will corrupt the digitized voice data, often making voice recognition slow, inaccurate or impossible.

Video

One increasingly common form of input is video, such as video e-mail or two-way videoconferencing. In this case, the computer is used as a medium for people to contact each other. Pictrackit and Sony are two of the leading videoconferencing system suppliers, but there are many home videoconferencing products for the consumer as well. Microsoft's videoconferencing software and Logitech's Camworks cameras are two of the most popular personal video input products.

Also Rans, or Still in the Running?

Despite Bill Gates' personal enthusiasm for pen computing, it has never taken off as a major input technology. Apple's Newton MessagePad, which was supposed to validate pen input, was a flop. However, some products such as the 3Com Palm line of handheld devices and the Fujitsu Stylus pen computer have shown there is a market for well-designed, productive pen systems.

Changing the Shape of Computing

Today's desktop computer is almost certain to change radically in the next five to 10 years. Voice recognition will play a big role in that. Computers may eventually be boiled down into one chip, and be fully portable or wearable. ■

Jeff Evans is Assistant Editor of Canadian Computer Weekender. He can be reached at jpe@telus.com.

Some Notable Players are Making Their Moves

by Jeff Evans

Apple Computer Inc. (<http://www.apple.com>)—Apple has a history of innovation that is unique among PC makers. It helped invent and certainly popularized the computer mouse. It pioneered voice recognition before falling back a bit from the leading edge of innovation in the last few years. The new Apple iMac has a unique, small circular mouse, which seems best to other laptop mice.

IBM Corp. (<http://www.ibm.com>)—IBM is the most prominent player in voice input, with a continual research program into speech recognition that has run for more than 30 years. With a full range of VoicePro speech recognition products, IBM is already world leader in creating a laboratory-size (and for voice input, IBM is also the developer of the ThinkPoint computer's pointing device, used on all ThinkPad notebooks. Versions of the same device are widely used on other notebook makers' machines as well. IBM also offers a range of scrolling mice.

IBM's greatest strength is in its research lab. Its San Jose-based Lab facility south of San Francisco, for example, CDWaves able to voice new generations of input technologies is gathering and integrating improved ThinkPad software, pen computing, touch entry and very sophisticated speech recognition systems for enhanced travel agencies and banking.

Fujitsu Personal Systems Inc. (<http://www.fujitsu.com>)—Fujitsu is a leader in Windows pen computing. It offers a line of handheld PCs with full PC functionality and compatibility, but which are designed for pen input, rather than keyboard or mouse input. Fujitsu is heading the Working Mobility Page from May 7 to 9 in Orlando, promoting pen computing solutions in a variety of industry categories, including healthcare, insurance, sales force automation, justice reform and public safety. Fujitsu has also announced 30-bit pen support through a collaboration with Communications Intelligence Corp., developers of Penix 1.0, a 30-bit pen extension for current versions of Windows.

Logitech Inc. (<http://www.logitech.com>)—Logitech has been perhaps the most consistently innovative company in the world—bringing new input technologies to the market in the form of well-designed, appealing key boards, mice, joysticks and other game controllers. Among the company's current products is the New Touch Keyboard, an ergonomically advanced split keyboard with a generous, curved palm rest. It also contains a touch pad, a feature that reduces or eliminates the need for a mouse. Also new is the Internet Keyboard, a more conventional (right) keyboard with an integrated palm rest but no touch pad. Special features keys quickly and automatically call up connections to Internet services.

Logitech also offers a wide line of computer mice, including the MicroWheel iWheel. The scrolling wheel makes scrolling up and down large documents or Web pages much easier. The company's game controllers include steering wheels, game pads, and joysticks such as the WingMan Force Force football joystick.

Simple Technologies Inc. offers Key Tronic, Cherry, Sigma (<http://www.simpletechnologies.com>)

Simple Technologies is a Canadian distributor of a number of input devices, including Key Tronic's keyboards and mice. For example, Key Tronic offers the Lifetime mouse, a rugged pressure device that uses optical motion-detector technology instead of the usual rolling mouse tracking ball. Also, Key Tronic supplies custom designed French Canadian and TBRS keyboards. Simple Technologies also carries the Cherry line of advanced keyboards, including models with special features for point-of-sale applications, such as smart card and magnetic stripe readers. The Sigma line of keyboards features wireless models of its Freeboards line.

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The Big Opportunity of Small Business

by Gary Wrencheright

Small businesses represent a huge potential market.

A study released earlier this year by International Data Corp. (Canada) Ltd. supported that small business PC purchases are far stronger than any other sector of the market. In a report entitled the "Canadian Customer Decision and Buying Behavior Desktop PCs," IDC Canada said although 89.4 per cent of all users surveyed for the report indicated plans to acquire PCs, the highest rate was among small businesses (in this case, companies with one to 50 employees).

"In addition to the desire to upgrade existing machines, the growing number of employees in small businesses translates into additional PC purchases," suggested the report, which further revealed a demand by small businesses for PCs with more features. "When asked about the ratio of mainframe PCs to non-mainframe PCs, small sales lead the way in terms of future PC purchases with mainframe's lagging."

The report's market figures from the U.S. In a February report, Datapoint's market research unit of Gartner Group, suggested that the small business market is one of the few sectors of U.S. personal computer industry to enjoy strong growth. Although Datapoint predicts that overall PC industry growth for the 1998 calendar year will be less than 20 per cent, the U.S. small-business PC market is forecast to increase by 34.7 per cent in 1998.

Jason Stutsa, an industry analyst at Datapoint's computer systems and peripherals group, suggests that the small business PC market is underpenetrated, so buying is more fervent than other more penetrated markets.

"Datapoint predicts that shipments will increase the most to businesses with between 10 and 49 employees," he said. "PC shipments in this category should top 34.5 per cent."

Outside the classical halls of research companies, the story seems to be the same in Canada. According to Gary Mecklen, vice-president of operations for the Vancouver-based on-line national retailer Megadepot, small business sales are strong. But he admits small businesses are very strategic about their purchases and tend to be



more cost-conscious than large corporations. And Mecklen should know, as small and home-based businesses make up more than 60 per cent of his customer base.

The key to making revenues from selling local, homebased applications to small businesses appears to lie in helping customers create complete solutions.

Office 97 Small Business Edition Version 2.0

Office 97 SBE, as it became known, was launched by Microsoft Canada in March as a somewhat "box of sequence" version of

Microsoft Office 97. But the company obviously felt it needed to upgrade its offering to small business well in advance of the next major release (Microsoft Office 2000, due next year).

Office 97 SBE was the first version of Office to come bundled with the newly improved Outlook 97 personal information manager (e-mail client).

By including Outlook 97 (and since then Outlook 98), Office 97 SBE provided a platform on which all kinds of context-based and activity-based solutions could be created within Outlook and integrated with the existing office tools. Outlook is highly configurable, giving VAs the opportunity to create something quite unique from within a standard application — thereby giving solution providers another way to add value to the sale.

Apart from Outlook, Office 97 SBE also includes Microsoft Word 97, Microsoft Excel 97, Microsoft Publisher 98 and a collection of small business management and marketing tools. As a showcase for the kinds of industry-specific solutions that can be created with this collection of tools, Microsoft included something called the Business Financial Manager 98. This is a useful what-if tool for making pricing and inventory management decisions, as well as creating financial projections and industry comparisons.

Megadepot's Mecklen, however, suggests that the inclusion of Publisher 98 may be the real bonus for many small businesses. It includes templates that allow users to create their own business cards, brochures, menus, business stationery — newsletters and Web pages.

For the forward-looking VARS, the inclusion of Publisher also opens up the opportunity to create templates for stationary and other documents.

Microsoft Office 97 Small Business Edition version 2.0 is priced at \$699 and has an upgrade price of \$349.

Intuit's QuickBooks

Intuit Canada Ltd. has adopted a similar strategy in appealing to the small business market with two products: QuickBooks for Home and Business and QuickBooks.

For small offices and home-based businesses, Intuit Canada is pushing the latter product. Not only does it sell for less than \$300, but it aims to offer all the tools that many Canadian small businesses and self-employed people need to be able to track their finances. It recognizes the fact that for self-employed people, the line between business and personal finances is often blurry and this allows user to manage small business and home finances together. And all of that makes life a lot easier when it comes to filing taxes next year.

It is also one of the few personal finance applications that properly tracks Canadian tax issues such as GST and HST. In addition, it lets the user create invoices (with appropriate taxes), track unpaid amounts, flag items that are reimbursable and helps automatically list them to the right account.

The software also automatically tracks the user's tax position with relation to those amounts so that there should be no unfortunate run-ups over GST, for example.

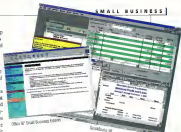
There's also a feature QuickBooks Planner to design what-if scenarios during the year in order to plan ahead and save on taxes. Also useful is a debt reduction planner that aims to help deriving a step-by-step plan to get out of debt sooner and save money on interest.

But for dealers and VARs, a home use of financial products may be QuickBooks 96 and QuickBooks Pro 96 for Windows — which offer more opportunities for customization and adding value. QuickBooks 96, which was released late last year, includes more than 40 new features, such as QuickBooks Navigator, Complete Canadian Payroll and Accountant's Review.

Intuit says this version of QuickBooks was created after considerable consultation with small businesses. "We asked small business owners what they wanted in an accounting software package. They told us keeping their companies' books was a hassle. They need software that is simple to use, easy to customize and works the way their businesses work," explained Bruce Johnson, general manager of Intuit Canada Ltd. "We listened carefully and tailored QuickBooks 96 to meet those challenges."

The big thing about QuickBooks 96 for dealers, VARs and solution providers is that it is possible to customize the software to create bespoke systems for customers. To do that, QuickBooks includes:

- **Layout Designer:** The new Layout Designer gives the flexibility to design invoices, cash sales forms, statements, credit memos, and purchase orders to look exactly the way they want them to look. Developers can now easily control the size and placement of fields by dragging and dropping them with the mouse. The Layout Designer also supports color logos and custom color boxes so it is possible to create sales forms and other business communications forms to best reflect a company's best image.
- **Multiple Custom Invoices, Statements and Other Forms:** QuickBooks now provides the capability to create multiple custom invoices, statements and other forms. Users can create a different invoice style for every type of customer. For example, users can create one style for retail customers and a different style for wholesale customers. QuickBooks 96 also ships with a variety of pre-defined invoice styles and other forms.



QuickBooks Small Business Edition

QuickBooks Pro

The estimated street price for QuickBooks 96 is \$199/95. Current QuickBooks and QuickBooks customers get a \$30 rebate. The estimated street price for QuickBooks Pro 96 is \$249/95. Current QuickBooks and QuickBooks customers get a \$50 rebate. Current QuickBooks Pro customers get a \$75 rebate. TM

Greg Wheelwright is a Vancouver-based journalist who specializes in high-tech/electronics reporting. He can be reached at greg@bcency.com.



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The Many Faces of a Channel

By Paul Weinberg

Living with multiple personalities almost seems to be a key to success in the volatile PC channel.

Consider: there are PC manufacturers who sell directly to end users, distributors that assemble systems and do configuration, and resellers who performing system upgrades.

There's always been a blurring of channel categories, but it's become more pronounced of late. "Over 50 per cent of the companies [in the channel] do two or three things," says Bob Prichard, president of the Kingston, Ont.-based R. B. Prichard & Associates. Furthermore, he notes that no one area — for example, software, services or hardware sales, accounts for more than half of a business's activity.

Without a doubt, the impact of Dell Computer Corp.'s direct sales of PCs has been huge. Unlike its competitors, this vendor does not have to subsidize some of the inventory costs borne by reseller and distribution partners as prices for PC equipment fluctuate. In response, companies such as IBM Corp., Compaq Computer Corp. and Hewlett-Packard Co. have tried to curtail their own costs by shoring off some of the price protection offered to the channel, says Richard Marchese, president of the Toronto-based Marchese & Associates Inc. Windows isn't always compensating resellers who have held onto unsold products for too many months, he says. The attitude in the PC maker's level, Marchese says, is: "That's just your tough luck on poor inventory management for buying stuff that you don't really need to sell right away."

For the past year, IBM, Compaq and Hewlett-Packard have all started looking at build-to-order and configure-to-order programs to counter the Dell advantage and still maintain their channels, but for the most part, they've yet to get the programs really off the ground, particularly in Canada.

"We are still in a development mode," says Tony Divo, manager for Canadian channels research for the Toronto-based International Data Corp. (Canada) Ltd.

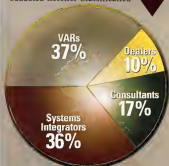
Dell is the overwhelmingly dominant player in the Canadian direct PC sales channel. This differs from the U.S., where Dell has more competition from other large vendors, such as Gateway 2000, suggests Marchese. "Dell has certainly had a lot of experience and expertise in the area. But there is no reason you know why it can't have more competition in Canada. I mean, you look at a company like Gateway 2000, which is pretty strong in the U.S. [it] hasn't had much of an impact in the Canadian market. I think if they directed more of their resources here, they could be quite successful too, using a similar set of business as they have done in the United States."

Small resellers that sell direct compete about a third of the Canadian PC market, but their numbers will shrink, says Albert Doucet, director of special projects for Toronto-based Evans Research Corp. In an analysis of the purchasing plans of computer dealers, consultants, VARs and systems integrators for the first quarter of 1998, he found that the top priority for resellers is to "increase sales" in terms of the brands they choose to carry and the distributors they buy from. "One glaring finding of the report is that reseller margins have dramatically decreased."

The combination of slimmer profit margins for computer head-

Annual

Canadian Reseller Classification



Source: 1998 Canadian Channel Purchasing Patterns Study, Evans Research Corp.

ware, where the prices just keep dropping, and an insignificant cost difference between first and second tier brands, has made resellers more likely to stick with the major vendors, particularly IBM, Compaq and Hewlett-Packard, cautions Doucet. He attributes this to a perception in the channel that those companies carry more reliable products than the clone or white box makers. "They are focused on the brands that don't give them trouble."

One another kind of challenge has come along for the resellers who stick with the major brands. IBM and Compaq in the past 18 months have been reducing their ranks of authorized dealers in the Canadian market, reports Mark Sheinfeld, senior vice-president at

Player

Revenue of Canadian Channel Players

\$100K	3%
\$100-200K	6%
\$200-300K	6%
\$300-500K	16%
\$500-\$1M	21%
\$1-2M	25%
\$2-5M	12%
\$5-10M	9%
\$5M	3%

Source: IBM Canadian Channel Purchasing Patterns Study, Evans Research Corp.

it is for large corporate computer dealers like SHL, Systemhouse, Compugen or GE Capital. These companies, because of their size and well-focused clientele, can deal in large-volume sales.

Of course, resellers need to find ways to provide more services and value to both the corporate and home customers, say the pundits. But that can entail a major investment. The small operators that make under \$1 million in gross sales still constitute 96% (nearly) of the close to 30,000 dealers in the Canadian channel, and cannot afford to recoup the kind of infrastructure required for this type of business, says Doucet. He estimates that up to a quarter of the revenues generated by the large corporate dealers come from services, while services account for only 10 per cent of revenues for the smaller resellers. The latter more often fall back on the PC manufacturers, which have developed services packages that can be sold to end-users.

Doucet wonders how some resellers stay in business without working "they had gone to dental school." But he says he often runs into the same over-managers he encountered eight years ago while doing channel surveys. The IDC analyst says it is probably harder today for someone new to the industry to start a computer dealership. "If you are a younger person, [you] are more likely to work for someone than go out on your own. I find the industry is getting older. It's still largely male."

Regarding typical resellers, he said: "They started their businesses in the '80s. They got some customers and they are still there."

The VAR channel is not likely to disappear. After-sales support and service are matters in the growing market of small and home offices, which have hardly anyone to call on for assistance in a special configuration, says Pritchard.

The VAR business model works because it can offer that personalized service in every community, adds IDC's Oliver. "The major vendors have localized people sales forces [in form of resellers] in every town and city in Canada. Whereas Dell doesn't have anything at the local level."

Distributors, not resellers, are the ones facing major challenges, according to SHL's Sheasfield. He says that build-to-order is just one step along the way to the PC makers' ultimate goal over the next three years: to have the channel and particularly the large distribution manufacturers produce the products. Vendors seek to get out of the money-losing activity of making PCs, wanting instead to stick with designing products.

"If you are a younger person, [you] are more likely to work for someone than go out on your own. I find the industry is getting older. It's still largely male..."

— Albert Doucet

Ontario-based SHL, Systemhouse Inc. He estimates that hundreds of de-authorized resellers have turned to selling second-tier PC equipment. "I don't think they were doing the volumes they had committed to, or IBM [and] Compaq expected them to do."

Industry analysts say the number of computer stores in major centers in Canada have declined. And there is some consolidation of existing PC resellers. Future Shop, for instance, has shut down some outlets on the West Coast. It's the smaller resellers who are experiencing the most financial pressure, says Monroville. He suggests that shrinking profits on hardware is more of a problem for a modest operation than

in Sheasfield's scenario for the near future, the resellers will continue to buy and sell computer equipment. But the distributors (residual-channel assemblers) will have to expand from their current make-and-place framework. "It is a massive undertaking, they don't have the existing processes or systems to do it, or, the people to do it. But that doesn't say they can't." ■

Paul Wrasidlo is a Toronto-based journalist and can be reached at pwrasidlo@utoronto.com.

Column

At this time of year, you're probably starting to review your 1998 expenses relating to your business and trying to figure out if you are ahead or behind.

Take heed. With some good professional strategic tax advice, you can make sure that you leverage all legitimate and eligible expenses and deductions. Many small business and home business owners leave a lot more on the table than they need to. Keep two overriding principles in mind: You need the money more than Revenue Canada, and if you don't adopt a proactive and systematic approach to your business tax planning, no one else will do it for you.

Many small business owners don't know all the types of tax deductions available or how to take full advantage of them. Often overpay because they are conservative by nature. And some either receive poor tax advice or no advice at all. Whatever the reason, if you're paying too much tax, it's time to stop.

Here are the deductions most frequently missed or ineffectively used by home-business owners as well as small business owners generally. These may apply to you currently as a reseller, or with some strategic tax advice in your particular situation, could be structured and implemented, even if your primary business is a retail location.

- **Car:** If you have one car and use it for business 50 per cent of the time, claim half your car-related expenses (such as gas, oil, maintenance, insurance, interest on car financing costs) as business expenses. You should maintain a mileage log book to support your usage claim. If you have two cars and use one exclusively for business, you can claim 100 per cent of that car's expenses. Be sure to claim depreciation of 30 per cent on your car and deduct the appropriate portion each year from income. Make sure you obtain insurance coverage for your car to cover your business usage. The additional premium is 100 per cent deductible.
- **Furniture and Equipment:** Your office furniture, computer hardware and software, printer, fax, copier and other equipment have to be depreciated every time, using the capital cost allowance formula, which lets you deduct a portion (30 per cent to 100 per cent) each year. That's the concept of depreciation. The cost of the asset has to be spread over the projected useful life of the asset.
- **Home:** Deduct the portion of your home that is used regularly for business purposes. This could include work, office and storage areas. If you have customers coming to your home, claim a separate reception area and washroom for business use, or a portion of it if

It's Not What You Make

But What You Keep

it's shared between personal and business uses.

- **Meals:** You can deduct 50 per cent of your total meal costs (including alcohol, taxes and gratuity) relating to promotion or other eligible purposes. That includes taking a prospective or existing customer out to lunch or dinner, or someone who is knowledgeable in the industry whose expertise and opinion you want to benefit from. If you attend a trade show and pay for lunch yourself, you can claim 50 per cent of that cost.
- **Salaries:** Salaries paid to children, spouse, relatives or others to perform work for your firm are all deductible expenses. Pay rates should be reasonable and arrangements structured properly to avoid problems in case of an audit.
- **Travel:** This is one deduction many people don't fully understand. With proper tax advice and planning, you should be able to claim up to 100 per cent of all costs (except meals, which would be at 50 per cent. The percentage and eligibility of deduction depends on whether your trip was deemed to be business-related exclusively (100 per cent) or partially (50 per cent).
- **Education:** If you attend any seminar, conference, convention or make travel relating to your current or future business interests or operations, keep all receipts. They are 100



By Douglas Gray

per cent deductible. Don't forget to include any parking costs. Also all subscriptions to magazines and newspapers are tax deductible if you are incurring those expenses to keep your knowledge current (For example, keeping aware of trends, ideas, the competition, pending legislation, or the economy.) Don't forget any Internet-related costs, such as ISP fees. You are incurring those expenses for research and other business-related purposes.

Remember to obtain professional tax advice on an ongoing basis. Obtain the free "1998 Business and Professional Income Tax Guide," from Revenue Canada. Ask your professional qualified accountant (a chartered accountant or certified general accountant) about all the tax saving strategies available to you. ☐

Douglas Gray, LL.B., has had extensive experience as a lawyer specializing in small business. He is currently a speaker consultant and author of 16 best-selling books, including The Complete Canadian Small Business Guide (published by McGraw-Hill Ryerson) and Start and Run a Profitable Business Using Your Computer and Marketing Your Product (all three published by Self-Counsel Press).

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Column



by
Alan Zeman

Last June, we suggested that buyers say "No" to the Celeron — Intel's then new product aimed at the burgeoning low-cost computer market. We felt that the CPU's lack of a Level-2 cache reduced performance of typically applications — in some cases, below the level of the previous-generation Pentium MMX, and certainly below the performance of competitive products from chipmakers AMD and Cyrix.

(Just to clarify, all Intel-style CPUs since the 486 have included a small amount of cache built right into the CPU itself. Level-2 cache provides a second level of high-speed cache from isolated CPUs like the Pentium or AMD's K6 have the Level-2 cache RAM on the motherboard, while Pentium II CPUs include the Level-2 cache in the large CPU cartridge.)

Since readers, primarily game players, wrote in favor of the Celeron's Pentium II-class floating-point unit (math co-processor) and the ability to easily hot-swap Celeron beyond its rated speeds. (In general, sales of the Celeron have been disappointing, and Intel has quietly raised its non-gamers Celeron-A (formerly code-named Mendocino) to market. This version fixes the complaint about the lack of a cache in the CPU's outgrowth, Celeron — The Sequel includes 128KB of Level-2 cache. By comparison, Pentium II processors include 512KB of Level-2 cache.

While this may seem like a modest amount of cache, in some respects this new Celeron design goes beyond the highest-priced Pentium II. Like Intel's super-expensive Xeon processors (aimed at multi-processor server designs), Celeron processors are able to access the Level-2 cache at full processor speed. Pentium II units access their Level-2 cache at half the processor speed. So a 500MHz Celeron accesses its Level-2 cache at 300MHz, while a Pentium II running at the same speed accesses its cache at only 150MHz. (And Socket-7 processors, like AMD's K6 access the Level-2 cache at system bus speed — typically 66MHz or 100MHz.)

So the nouveau Celeron-A models have less cache, but access it faster. The result inevitably varies according to what's being done, but overall results are quite acceptable — this pair low-cost Celerons on a par with more expensive Pentium II running at the same speed. In fact, with cache-variant Celerons available at 300MHz and 333 MHz speeds, expect the market for Pentium II at that speed to dry up.

One thing to watch out for, however — while all Celeron processors available at 333MHz (and eventually 400MHz) speeds include the vital Level-2 cache, there are Celeron 300 models with and without the cache built in referring to the so-called 300MHz Celerons as Celeron 300s. Anything referred to as a Celeron 300 (without the easy-to-read letter "A") lacks the Level-2 cache, and in my opinion, should be avoided.

The addition of the Level-2 cache, however, makes it harder to run the new Celerons at speeds dramatically above their official rating — a problem known as overclocking. The cache is most sensitive to overclocking, which is why the original cacheless Celeron could be speeded up so successfully. As well, Intel has set the CPU's multiplier so that it can only be set to the CPU's rated speed or 500MHz. Since the CPU won't run at 500MHz, this makes it virtually impossible to overclock to even modestly speed-up rates. Intel claims this tactic isn't

aimed at end-users wanting to improve system performance, but rather at encouraging system vendors wanting to overclock systems to sell a lower-speed processor in a higher-performance model.

This isn't the only change in store for the Celeron line, however. Not surprisingly, faster versions are expected. 366MHz and 400MHz models are in line, which will once again push out more expensive Pentium II models at these speed ratings.

But that's not all. Originally, the speculation was that Intel was promoting the Socket-7 design Celeron to move the low-priced market away from Socket-3 motherboards into (Intel's proprietary) Slot-1 designs, making it more difficult for manufacturers to produce models that could use either Intel MMX or competitors' CPUs. Slot-1 designs are limited to Celeron, or Pentium II CPUs, both made only by Intel. However, recently Intel hinted at Socketed Celeron models, available at even lower prices and perhaps hitting the market in time for Christmas.

Albert Yu, Intel vice-president and general manager of the company's microprocessor group, said at the Intel Developer Forum that the company was intent on phasing out the Slot-1 version of the CPU, replacing it with a Socketed version. According to Sept. 15 reports on ZDNet, Yu expressed these views to be made available at the same speeds as the current Celerons, but at lower, currently undisclosed pricing.

The 375-pin socket will not be compatible with other the Socket-7 design, used in Pentiums (and others), or in the Socket-8 design used in the Pentium-Pro models. Like Socket-8, it will use the PB bus architecture found on current Pentium II and Celeron models.

At the Developer Forum, other Intel plans for the new future include:

- Multimedia desktop processors will include the new Realtek instruction set, designed to speed up 3D and floating-point instructions. These will be similar to the 3D-Now instructions built into the already-available AMD K6-2, but will not be compatible with 3D-Now. Look for them first in a 400MHz Pentium II model.
- 4X Accelerated Graphics Port (AGP) will double the speed of the currently-available version.
- Direct RDRAM is a new, faster model of memory (using technology developed by Rambus and first used in the Nintendo 64 game system).
- The Celeron chipset will provide motherboard support for the new AGP and memory models.
- And software-based DVD support makes it easier to replace CD-ROM with DVD units.

But Intel's what's not expected next year: the 64-bit Mented chip. Delays with this technology create a window of opportunity both for Compaq's Alpha and for a variety of Unix-based solutions, although I'd be surprised if they make effective use of the time.

In the past, year-old high-end designs became this year's bargain models. This is no longer the case. Instead, vendors and product lines will be forced to focus almost exclusively on one (or the other) end of the market. ☐

Alan Zeman is a computer journalist and member living in Vancouver. He can be reached at azeman@hscn.com.



CCCA Charitable Foundation **5th Annual Bowling Tournament and Gala Dinner**



Canada Chinese Computer Association (CCCA) is proud to host the CCCA Charitable Foundation 5th Annual Bowling Tournament & Gala Dinner which will take place on Saturday, November 7, 1998.

It has always been one of the objectives of CCCA to be involved with community services. Through our fund-raising events, we have had the pleasure of being able to contribute financially to other charitable organizations and causes. Proceeds from this year will go toward The Canadian Red Cross Society - China Flood, The Salvation Army and CCCA Charitable Foundation.

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NEW PRODUCTS

Pen scanner will translate!

Venocoover-based LiScan Technologies is shipping an unusual device called Quickscribe, developed by WinCom Technologies Ltd. of Israel. The pen-shaped product can be used to scan and translate text, within five seconds, says the company.

The translations are shown on a liquid crystal display.

This version of the product is bidirectional, supporting translation from English to French, Spanish, Italian, German, Dutch or Portuguese and vice versa. A unidirectional version of the product translates from English to Japanese, Chinese, Korean, Russian or Hebrew.



Computer Barbie gives for Christmas

Metrol Media, the software publishing arm of toy giant Mattel Inc., has rolled out a full line of entertainment software just in time for the holiday gift season.

Already credited with helping to establish the hot new girls' software market with its 1998 release of the Barbie Fashion Designer CD-ROM, Metrol is adding a number of new software and hardware products to its line. New CD-ROM titles include Barbie Riding Club (a horse riding simulator), Detective Barbie (where the player helps Barbie search for the magically disappeared Kim), Barbie Pet Designer (the exciting colorful finger-painted, pet designer), Fashion Magic Tami Top (a hair creating personalized iron on transfer), Fashion Magic Tenses and Fashion Magic Hair Wave (a Chrome kit), and Barbie Jewelry

Designer

Mattel sold more than 1 million units of Barbie software in 1997, bringing the company US\$4 million in revenue.

Mattel has also released the Barbie Digital Camera, a \$99 digital camera and software package that lets users take color digital pictures, transfer them into a PC, and use a very common browser but intuitive software package to edit, rotate and enhance the digital photos.

In addition to its own proprietary Barbie brand, Metrol, as a licensed Walt Disney Company subsidiary, has secured the rights to make My Interactive Pooh, comprised of a CD-ROM title and a talking Pooh the Pooh plush doll. Intended for very young children, the My Interactive Pooh combines fun and learning.

Finally, Metrol has also leveraged another of its proprietary toy brands, the Hot Wheels miniature racing cars, into an interactive software game. The Hot Wheels Street Track Driver CD-ROM is a racing simulator in which the user gets to drive a Hot Wheels car on demanding scale model race tracks around a 3D simulated home (including the place that run through the attic, back room, yard, basement and the greenhouse).

The new products offer great points to attract a wide range of potential customers, from the \$29.95 price tag for the Fashion Magic toys, to \$49.95 for the Barbie dolls, \$59 for the Barbie digital camera kit, and \$49 for the My Interactive Pooh.

Metrol

See <http://www.barbie.com>

Sellnet's flat speakers will launch at Comdex

Sellnet Computer Inc. plans to launch the AudioShare MP4 four-piece integrated flat-panel multimedia third-party system at Comdex/Fall in Las Vegas this month.

Components include two three-watt flat-panel speakers, measuring 5 1/4 by 3 1/4 by 1 1/4 inches, a 12-watt (RMS) subwoofer, a three-watt (RMS) center speaker and an AC power adapter. The flat-panel speakers come with well-mounting holes and two detachable stands for desktop or floor mounting and are designed to fold up for easy storage. See <http://www.sellnet.com>.



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IBM supports NT with Redfly

IBM Corp. has announced Microport's Windows NT network operating system with a vengeance, resulting in a new generation of IBM Redfly servers.

Rather than making servers that run more or less based on desktop PCs, IBM will, in effect, shake the latest in mainstream style technology down into an Intel server footprint. This policy is intended to give better performance to Windows NT network customers and differentiate IBM's servers from any of the current competitors in the NT sector.

At a media demonstration in Toronto at the end of September, IBM showed three new servers that brought mainstream technology to the Intel platform to a unique design. Ranging in price from under \$4,000 to \$55,000 depending on model and configuration, the new Redfly servers offer features such as a superintelligent video XP monitor for handling thousands of macros, Light Path Diagnostics for quick trouble-shooting, locally redundant memory, built-in backup components, tape-less file-level client data paths and multi-bit error-correcting memory technology.

See <http://www.ibm.com/poli/schedule> for details.



Symetec names sales manager

Symetec Corp. has appointed Michael Murphy to the position of corporate sales manager for Canada.

He reports to Christopher Marmata, who is Symetec's Canadian general manager.

Murphy has held sales and systems engineering positions since joining Symetec in April 1995. He was most recently Symetec's systems engineering specialist for Canada.

Previously, Murphy worked for the federal government in Ottawa and western, evaluating and supporting security and anti-aircraft products for Police Works and Government Services Canada, plus the Department of Foreign Affairs and International Trade.

ATI's Ho is Ontario entrepreneur of the year

K.J. Ho, president, co-founder and CEO of ATI Technologies Inc., has been named Ontario Entrepreneur of the Year.

The competition is sponsored by a number of Canadian organizations, including Ernst & Young, Bank of Montreal, Nesbitt Burns, McCarthy Teasdale and Air Canada. Ho was one of 31 entrepreneurs from 26 companies named as finalists.

ATI said the award recognized Ho's achievement "in building ATI from a startup position into the world's largest computer graphics company



K.J. Ho

and Canada's third-largest high-tech firm." The company's 1996 revenues will exceed \$1 billion.

Ho has more than 25 years of experience in the electronic and computer industry. Before he founded ATI Technologies Inc. in Toronto in 1985, he worked for electronics and computer manufacturers in Hong Kong, including Control Data, Data Products, National Semiconductor and Philips.

Of note, Ho was also recognized this summer by Canadian Computer Wholesalers with the Technical Excellence Award for Canadians.

Dell appoints new president for business in China

Dell — Dell Computer has appointed David Chen as president of its operations in China and Hong Kong. In his new role, Chen will oversee the Dell China operations including the China customer centre assuming responsibility for strengthening Dell's growth in China. He will report to John Legans, president of Dell Computer Corp., Austin, Texas.

Chen joined Dell in August 1995 and was most recently the driving force behind Dell's Asia Direct business unit. Prior to joining Dell, Chen was group managing director of Ocean Group International. He also spent 10 years at IBM.

Delphi announces COO

Delphi Information Systems Inc. of Rolling Meadows, Ill., has promoted Robin Rime from senior vice president to chief operating officer. He will oversee Delphi's sales, services, support, professional services and marketing areas.

The company provides software for the property and casualty insurance market. □

Calendar

Nov. 3
IBM's Victory Speaker Series
Toronto
<http://www.ibm.ca>

Nov. 3-5
The Enterprise Architecture Conference and Exposition
Chicago
<http://www.dell.com/enterprise/eaconf/>

Nov. 5
IBM AS/400's road show
Toronto
<http://www.ibm.ca/400/ibm.asp>

Nov. 6
Canadian Innovation & Productivity Awards gala evening
Vancouver
<http://www.cipa.com>

Nov. 11-12
Internet + Internet '96
Toronto
CNE, S20
<http://www.netcon.com/con>

Nov. 6-10
The CIO Summit
Toronto
Dell, C112, 230-0553

Nov. 10-12
Comdex/Pacific
Las Vegas
<http://www.comdex.com>

Nov. 18
IBM's Special Internet Shop Meeting
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<http://www.ibm.ca>

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NiftyNumbers

Report from Bradenton

Help Desk, Services, Drive Systems Integration

by CCM Staff

Systems integration and maintenance markets are still growing, but the real growth is being driven by help desk and other professional services, says a recent report from Toronto-based Evans Research Corp. (ERC) called, "The Systems Integration and Maintenance Service Market in Canada."

ERC says some customers just require provision of help desk personnel, which is a high-margin, low-risk business for systems integrators. But many organizations want both the facilities and the people supplied for the help desk, and that's a much higher-risk proposition.

Other important professional services include: network design, cabling and installation. There is a growing need for Internet and e-commerce consulting and for solutions developed with packages such as Lotus

Group, Sun's Java and Visual Studio, says ERC.

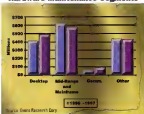
"The rate of service increase will diminish markedly as we approach the new millennium," said Allan Doucet, director of special projects at ERC and author of the report, in a statement.

He said, "The chief problem is that mainframe prices are in rapid decline. The second problem is that maintenance rates are under intense competitive pressure, which means that growth in this segment is sluggish."

ERC says systems integration accounted for \$438 million of the total \$1.5 billion hardware segment of the Canadian maintenance market in 1993/94.

Evans Research Corp. is a market research firm based in Toronto. The company can be reached at (416) 421-8814 or visit the Web site at <http://www.evansresearch.com>.

Hardware Maintenance Segments



Reader Poll

This issue:

By early 1997, there was already a lot of hype about the upcoming Universal Serial Bus standard that would support up to 127 devices with a 10Mbps data rate. But it took this year's launch of Windows 95 with its built-in USB support to generate more substantial product developments.

Our Question to You:

Looking towards 1999, how enthusiastic will your customers be about purchasing USB devices?

Which most closely reflects your view:

- ☐ In 1999, USB devices will slowly pick up popularity.
- ☐ In 1999 USB devices will explode onto the market place.
- ☐ The industry missed its chance with USB; the technology won't be significant.

Last issue, we asked:

Assessing the development of input technologies progresses solidly, what would be your ideal preferred method for mouse input?

You said:

- 0%** I want to input data solely with a pen interface.
- 15%** I want to use a more logical, comfortable keyboard.
- 62%** I want good quality voice-based input.
- 23%** I'm perfectly happy with current input methods.

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